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The motion of bubbles and drops in reduced gravity.

Cambridge: Cambridge University Press, (ISBN 0-521-49605-5/hbk). xvi, 471 p.
\$ 100.00; £ 65.00 (2001).

This is a carefully written monograph on the behaviour of fluid and gaseous matter under the influence of external forces. The main emphasis is on the reduced gravity situation, as met e. g. in artificial satellites like the space-shuttle in the outer space. All calculations and formulas are given in great detail, so this book is very useful for students in mathematical physics. The equations of hydrodynamics are given, and for the solutions many figures are supplied: They represent the different possibilities for streamlines, e.g., which appear during the motion of a pair of bubbles under the combined action of gravity and thermocapillarity. The dependence of the results on the Prandtl and Reynolds numbers is outlined, too.

As a matter of fact, the satellite orbiting the Earth is not in a gravity-free situation, only the gravitational field is suppressed by a factor $1/1000000$. It turns out, that even this small remaining gravitational force has really to be taken into consideration if surface tension experiments made in satellites shall be interpreted; to do so, the present book is a good help.

Hans-Jürgen Schmidt (Potsdam).